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1979 Survey of the Electronic Funds Transfer Transaction System

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Bank Administration Institute

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Contents

Figure v
List of Tables vii

Electronic Funds Transfer Transactions 1

Background 2
Survey Respondents 2
1979 Survey Highlights 2

Findings: ACH 5

ACH Transactions: Sent 5
ACH Transactions: Received 5
Sent Versus Received 5
ACH Transactions: Returned 8
ACH Debit Types 10

Findings: ATM 13

Transaction Types 13
Dollar Value of ATM Transactions 15
Weekly ATM Transactions 16
Location of ATM Units 19
ATM Installation Plans 20
On-line Versus Off-Line 22

Appendices

Appendix A — 1979 Survey Questionnaire 25
Appendix B — EFT Geographic Areas 47

Figure

B-1 EFT Geographic Areas 48

List of Tables

1 Percent of ACH Debits and Credits Sent by Area 6
2 Percent of ACH Debits and Credits Received by Area 6
3 Percent of ACH Items Sent Versus Received by Area 7
4 Percent of ACH Items Returned of Items Sent by Area 8
5 Percent of ACH Items Returned of Items Received by Area 9
6 Percent of ACH Debit Transactions Sent by Type of Transaction by Area 10
7 Percent of ACH Debit Transactions Received by Type of Transaction by Area 11
8 Percent of ATM Transactions by Type by Area 14
9 Average Dollar Value of ATM Transactions by Area 15
10 Average Weekly Transactions per ATM Unit by Area 17
11 Number of Weekly Transactions per ATM Unit Location by Area 18
12 ATM Units by Area 19
13 ATM Unit Installation Plans by Area 21
14 On-Line Versus Off-Line ATM Units by Area 22

Appendix B

B-1 Survey Respondents by Geographic Area 49

1979 Survey of the Electronic Funds Transfer Transaction System

Electronic Funds Transfer Transactions

Not too many years ago, bankers anticipated the "checkless" society in which electronics would replace paper as the principal payments mechanism. To date this has not materialized, and isn't likely to in the near future. The United States payments system remains firmly rooted in paper while electronics, on the other hand, is being re-evaluated in terms of its impact upon the payments system.

Unfortunately, most early research on electronic funds transfer transactions (EFT) omitted the most important factor of the equation — the consumer. The willingness of the consumer to relinquish traditional methods of handling payments was overestimated and the time required to generate a change in consumer habits was underestimated. Research today must concentrate on how the consumer uses current systems in order to determine how best to urge him towards the more cost-effective world of EFT.

EFT is an all-encompassing acronym. It involves automated clearing houses (ACH), which move both debit and credit transactions among financial institutions, and automated teller machines (ATM), which allow the customer 24-hour convenience to conduct many routine banking transactions. It also involves point-of-sale systems (POS), which provide convenience for the customer and security for the merchant, and telephone bill payment (TBP), which provides the customer the ultimate, at-home banking convenience. EFT is for both the consumer and the corporation. Regardless of the form it takes, it must provide the customer with something more than he is currently receiving and at a price that is competitive with current systems.

This report, the second in a series of annual examinations of electronic funds transfer transactions, analyzes the growth and usage patterns of EFT. The data in this report can be used by all financial institutions to measure and track their own experience in EFT and to compare themselves with other representative institutions. Subsequent surveys may be expanded to provide information on additional types of electronic funds transfer transactions.

Background

Bank Administration Institute has been involved in payments systems research for several years by conducting studies of both the check collection system and the emerging technology for the electronic transfer of funds. To consolidate research in the payments system, the BAI Check Collection Performance Measurement Survey was expanded in 1978 to begin tracking electronic and paper transactions simultaneously.

The Check Collection Survey, which has been conducted by BAI since 1971, is a one-week survey of the check processing activity of major banks. The survey is mailed each year to 225 banks with assets over $250 million. It is designed to provide a means of tracking the performance of the check collection system, especially exception items and productivity, in order to provide an early warning system for emerging problems throughout the banking industry.

Survey Respondents

In 1979, a total of 153 banks participated in the BAI Check Collection Survey by collecting data on both paper and electronic transactions during the week of November 19-23, 1979. The data on electronic funds transactions were then analyzed, with the results arranged according to the same 16 geographic regions utilized in the BAI Check Collection Survey.

The same banks that received the 1979 Check Collection Survey also received questions on electronic funds transactions (Appendix A). The two types of electronic transactions chosen for the study during the 1979 survey were automated clearing house (ACH) and automated teller machine (ATM) activity. The results were obtained by analyzing the data supplied by the 146 banks that answered the questions on ACH activity and by the 109 banks that answered the questions on ATM activity. All the participating banks had assets of over $250 million.

The formulas that were used in the calculations for each table are provided to assist bankers in making their own comparisons. Several respondents could not answer every question in the survey because of the internal systems in their bank. Consequently, only those banks that furnished valid answers to all questions pertaining to a given formula were considered in the calculations, which accounts for the varying number of respondents shown in the different tables.

Although the identities of the reporting banks are kept confidential, banks can utilize the data to compare their performance within a given market. Appendix B identifies the boundaries of each of the 16 geographic areas utilized in the development of this report.

1979 Survey Highlights

The answers to the questions on ACH transactions provided few surprises. Most banks still send and receive more credit than debit transactions, although the 1979 survey indicated a substantial increase in the percentage of credits processed. As in

1978, most banks indicated that they received more items than they initiated. In 1979, however, only one geographic area reversed either of these trends.

The 1979 survey further refined the questions on ACH activity by reviewing returns and types of debit transactions. The survey revealed that fewer ACH items were returned than paper checks. In 1973, a BAI survey established that 0.67% of all checks were returned. The 1979 EFT survey indicates that, on the average, 0.3% of the items originally sent by a bank were returned and that 0.1% of the items originally received by a bank were returned. As expected, almost no credits were returned, and debits made up the major portion of returned ACH transactions.

The banks that sent ACH debit transactions initiated 65.4% of insurance premiums. The other types of transactions, in descending order, were home mortgages, corporate payments, other types of payments (unclassified), and telephone bill payments.

The banks that received ACH debit transactions were less able to identify types of transactions, but, as expected, insurance premiums constituted the major portion of debit transactions received (31.1%). Other types of payments — corporate payments, home mortgages, and telephone bill payments — were the remaining debit transaction types surveyed.

Banks may wish to compare their weekly activity per ATM unit to that of the reporting banks. The data in this report can help banks determine their relative standing in terms of ATM activity within their market.

Questions on ATM activity were not only expanded but increased for the 1979 survey. Although the average number of weekly transactions increased, the median, which is unaffected by extremely high or low responses, decreased almost 24%. For the first time, the 1979 survey also included questions on deposits made through the ATM, dollar values of all types of ATM transactions, ATM installation plans, number of transactions by location of ATM unit, and on-line versus off-line ATM installations. Detailed results on ATM transactions are presented in Tables 8-14.

The 1979 survey, however, should be regarded as a one-week "snapshot" of the payment system of a limited number of larger banks. It should not be used to develop strict interpretations of the data. An additional caveat must be included. Since the 1979 survey is only the second in a series of on-going examinations of EFT activity, care should be taken in interpreting data for only two years, especially with the increased number of responding banks. As in all BAI surveys, both the averages and the medians have been provided to assist in data analysis .

The real value of this survey will be derived from comparing one year's data to the next. The trends that are identified over time will help the industry to plot its course for future years.

Findings: ACH

ACH Transactions: Sent

The percent of ACH debits and credits sent by the responding banks in 16 geographic areas is shown in Table 1. On the average, the banks sent more credits (70.5%) than debits (29.5%) during the survey week, which represents an almost 30% change in credits sent from the 1978 survey. However, the median rate of credits sent remained almost the same at approximately 100% between 1978 and 1979. Whereas the 1978 survey revealed that three areas sent more debits than credits, the 1979 survey found that only Houston sent more debits than credits, and that area was not one of the three previously reported. In five areas — Boston, Philadelphia, Chicago, Detroit, and Dallas — more than 90% of the items sent were credits, while an additional six areas sent between 80-90% of the items as credits.

ACH Transactions: Received

Table 2 shows the percent of ACH debit and credit items received by area. Obviously, since there are proportionally more credits than debits, the credits received (88.9%) are also greater than the debits (11.1%). However, the 1979 data revealed a substantially higher portion of credits received than in 1978. Both the average and the median rate of credits received are approximately 40% higher than in 1978. During the 1978 survey week, four areas received more debits than credits. During the 1979 survey week, no area received more debits than credits. Even the banks in the New York area, which in 1978 had initiated *and* received more debits than credits, showed the same results as the other responding banks. Seven areas received more than 90% of the ACH transactions as credits, and an additional four areas received 80-90% credit transactions.

Sent Versus Received

Table 3 shows the relationship between items sent versus items received by type of ACH transaction and for total transactions. Each type of transaction indicates that, on the average, more items are received by the participating banks through the

Table 1

Percent of ACH Debits and Credits Sent by Area

Area	Percent Debits† 1978	Percent Debits† 1979	Percent Credits‡ 1978	Percent Credits‡ 1979
Boston	0.2%	2.1%	99.8%	97.9%
New York	92.5	12.3	7.5	87.7
Philadelphia	13.6	5.2	86.4	94.8
Pittsburgh	7.8	25.8	92.2	74.2
Washington, D.C.	21.0	15.2	79.0	84.8
Atlanta	74.0	43.0	26.0	57.0
Chicago	33.5	7.6	66.5	92.4
Cleveland	18.5	10.5	81.5	89.5
Detroit	4.6	10.0	95.4	90.0
Minneapolis/St. Paul	*	*	*	*
St. Louis	61.0	17.9	39.0	82.1
Dallas	15.1	0.0	84.9	100.0
Houston	32.9	52.3	67.1	47.7
Los Angeles	25.2	10.4	74.8	89.6
San Francisco	12.7	40.9	87.3	59.1
Denver	1.7	14.7	98.3	85.3
Total banks	130	104	130	104
Average	44.0%	29.5%	56.0%	70.5%
Median	17.7%	0.7%	100.0%	99.3%

*No respondents; † $\frac{Q1}{Q5} \times 100$; ‡ $\frac{Q3}{Q5} \times 100$.

Table 2

Percent of ACH Debits and Credits Received by Area

Area	Percent Debits† 1978	Percent Debits† 1979	Percent Credits‡ 1978	Percent Credits‡ 1979
Boston	15.3%	8.7%	84.7%	91.3%
New York	53.8	25.3	46.2	74.7
Philadelphia	65.3	4.5	34.7	95.5
Pittsburgh	8.6	2.9	91.4	97.1
Washington, D.C.	41.4	11.1	58.6	88.9
Atlanta	45.4	24.7	54.6	75.3
Chicago	18.7	3.7	81.3	96.3
Cleveland	54.4	5.7	45.6	94.3
Detroit	16.3	36.4	83.7	63.6
Minneapolis/St. Paul	*	*	*	*
St.Louis	38.5	21.5	61.5	78.5
Dallas	11.9	2.1	88.1	97.9
Houston	14.9	15.8	85.1	84.2
Los Angeles	66.2	15.1	33.8	84.9
San Francisco	35.7	17.6	64.3	82.4
Denver	6.7	2.1	93.3	97.9
Total banks	130	146	130	146
Average	36.7%	11.1%	63.3%	88.9%
Median	25.8%	4.3%	69.9%	95.7%

*No respondents; † $\frac{Q2}{Q6} \times 100$; ‡ $\frac{Q4}{Q6} \times 100$.

Table 3

Percent of ACH Items Sent Versus Received by Area

Area	Percent of Debits†				Percent of Credits‡				Total ACH Item§			
	Sent		Received		Sent		Received		Sent		Received	
	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979
Boston	0.7%	16.6%	99.3%	83.4%	42.4%	26.5%	57.6%	73.5%	38.4%	26.0%	61.6%	74.0%
New York	81.4	10.8	18.6	89.2	29.2	25.7	70.8	74.3	71.8	27.5	28.2	72.5
Philadelphia	6.0	10.1	94.0	89.9	43.3	5.8	56.7	94.2	23.4	5.9	76.6	94.1
Pittsburgh	43.8	17.5	56.2	82.5	46.1	6.6	53.9	93.4	45.9	7.8	54.1	92.2
Washington, D.C.	15.3	22.2	84.7	77.8	32.4	9.2	67.6	90.8	26.3	11.1	73.7	88.9
Atlanta	46.3	22.6	53.7	77.4	20.1	11.1	79.9	88.9	34.6	16.3	65.4	83.7
Chicago	69.6	17.2	30.4	82.8	51.2	15.6	48.8	84.4	56.2	16.8	43.8	83.2
Cleveland	8.0	22.6	92.0	77.4	31.3	17.9	68.7	82.1	20.3	18.8	79.7	81.2
Detroit	1.6	4.6	98.4	95.4	6.3	4.2	93.7	95.8	5.6	3.2	94.4	96.8
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*	*	*
St. Louis	22.3	15.4	77.7	84.6	10.3	30.6	89.7	69.4	15.4	30.3	84.6	69.7
Dallas	36.6	0.0	63.4	100.0	30.6	4.3	69.4	95.7	31.4	4.2	68.6	95.8
Houston	12.6	18.7	87.4	81.3	4.9	17.6	95.1	82.4	6.1	18.6	93.9	81.4
Los Angeles	4.4	11.5	95.6	88.5	21.3	12.8	78.7	87.2	10.9	12.9	89.1	87.1
San Francisco	24.4	30.4	75.6	69.6	55.3	15.3	44.7	84.7	47.6	16.6	52.4	83.4
Denver	7.6	35.2	92.4	64.8	25.4	7.4	74.6	92.6	24.4	8.1	75.6	91.9
Total banks	130	142	130	142	130	143	130	143	130	144	130	144
Average	38.4%	39.6%	61.6%	60.4%	31.5%	16.2%	68.5%	83.8%	34.2%	19.6%	65.8%	80.4%
Median	0.0%	0.0%	100.0%	100.0%	10.8%	5.0%	85.9%	95.0%	8.6%	5.1%	87.8%	94.9%

*No respondents; † $\frac{Q1/Q2}{Q1 + Q2} \times 100$; ‡ $\frac{Q3/Q4}{Q3 + Q4} \times 100$; § $\frac{Q5/Q6}{Q5 + Q6} \times 100$.

ACH than are initiated. The median rate for all classes of ACH items indicated that 95-100% of the items processed by each of the responding banks were received from other institutions. None of the banks that participated in the 1979 survey sent more items than were received in a category. In five areas — Philadelphia, Pittsburgh, Detroit, Dallas, and Denver — more than 90% of the total ACH items processed were received from other financial institutions rather than initiated by the responding banks. Only one area — St. Louis — received less than 70% of the total ACH items processed.

ACH Transactions: Returned

The 1979 EFT survey introduced a question on the return of both debit and credit ACH transactions. The results are shown in Table 4. As expected, very few credit transactions were returned (0.1%) by the responding banks during the survey week. A substantially larger number of debit transactions were returned (0.8%) by the banks that participated in the survey. The survey did not request a reason for return on any of the ACH transactions processed. The average percentage of ACH debit transactions returned was affected by the high percentage of returns in four areas — Boston, Washington, D.C., Detroit, and Denver — which all reported a substantial percentage of returned debits during the survey week. The median rate of returned

Table 4

Percent of ACH Items Returned of Items Sent by Area

Area	Percent Debits†	Percent Credits‡	Percent Total§
Boston	28.5%	2.4%	7.8%
New York	0.0	0.1	0.3
Philadelphia	2.0	0.5	10.3
Pittsburgh	1.4	8.4	2.6
Washington, D.C.	20.7	0.2	2.8
Atlanta	1.4	0.6	1.0
Chicago	0.1	0.7	1.0
Cleveland	1.1	0.1	0.2
Detroit	13.6	0.0	7.6
Minneapolis/St. Paul	*	*	*
St.Louis	0.2	0.2	0.8
Dallas	0.0	0.0	0.1
Houston	0.0	0.1	0.1
Los Angeles	0.2	1.7	1.3
San Francisco	0.8	1.2	2.9
Denver	43.3	0.1	1.5
Total banks	51	98	96
Average	0.8%	0.1%	0.3%
Median	0.0%	0.0%	0.3%

*No respondents; † $\frac{Q7}{Q1} \times 100$; ‡ $\frac{Q9}{Q3} \times 100$; § $\frac{Q11}{Q5} \times 100$.

debits, which is unaffected by extremes, indicated that no debits were returned by 50% of the banks. Even with the substantially high debit returns, the rate of return on ACH items is approximately 50% of the incidence of return for paper checks. A 1973 BAI survey discovered that 0.67% of checks processed were returned for various reasons. The 1979 EFT survey revealed that only 0.3% of the ACH items sent by the responding banks were returned.

Although the incidence of return is substantially lower for ACH items than for paper checks, one major selling point of ACH services has been the certainty of the transactions. The 43.3% return rate for debits in the Denver area, although possibly affected by unusual circumstances, as well as the other high rates of return for items sent, points out a disturbing factor to be watched for in future surveys. Since this question was asked for the first time, the trend in future surveys will prove the validity of these initial results.

Table 5 indicates the percent of items returned that were originally received by the responding banks. The incidence of return for total items received is lower than that for items originally sent by the responding banks. The survey revealed that no credits, both for the average and the median, were returned when received by one of the responding banks. However, the average for debits returned that were received by the banks was almost the same as that for debits returned of items originally sent by the banks. The percent of debits returned that were received by the banks was not affected by the same extremes as in Table 4.

Table 5

Percent of ACH Items Returned of Items Received by Area

Area	Percent Debits†	Percent Credits‡	Percent Total§
Boston	2.7%	0.0%	0.1%
New York	1.7	0.0	0.7
Philadelphia	0.9	0.0	0.0
Pittsburgh	0.0	0.0	0.0
Washington, D.C.	3.3	0.0	0.2
Atlanta	6.2	0.1	0.3
Chicago	0.2	0.0	0.0
Cleveland	1.3	0.0	0.1
Detroit	0.8	0.0	0.2
Minneapolis/St. Paul	*	*	*
St. Louis	1.2	6.3	2.1
Dallas	0.0	0.0	0.0
Houston	0.7	0.5	0.4
Los Angeles	0.8	0.2	0.2
San Francisco	1.6	0.9	0.7
Denver	0.0	0.1	0.1
Total banks	134	138	137
Average	0.9%	0.0%	0.1%
Median	0.0%	0.0%	0.0%

*No respondents; † $\frac{Q8}{Q2} \times 100$; ‡ $\frac{Q10}{Q4} \times 100$; § $\frac{Q12}{Q6} \times 100$.

ACH Debit Types

The percent of ACH debits sent by the responding banks by type of transaction is shown in Table 6. Insurance premiums made up 65.4% of the debit transaction sent by the responding bank through the ACH. Home mortgage payments made up 14.5% and corporate payments, which replace depository transfer checks, made up an additional 10.0%. Of the payments that could be identified, telephone bill payments constituted the smallest portion of ACH debit transactions at 2.1%. On the average, only 7.9% of the items initiated by the responding bank could not be identified as to the type of transaction.

Table 6

Percent of ACH Debit Transactions Sent by Type of Transaction by Area

Area	Insurance Premium†	Home Mortgage‡	Telephone Bill Payment§	Corporate Payment ‖	Other Payments #
Boston	0.9%	0.0%	0.0%	48.0%	51.1%
New York	100.0	0.0	0.0	0.0	0.0
Philadelphia	0.0	0.0	0.0	0.0	100.0
Pittsburgh	0.7	0.0	0.0	99.3	0.1
Washington, D.C.	0.0	56.5	0.0	0.0	43.5
Atlanta	34.3	16.4	4.9	14.1	30.3
Chicago	29.8	53.5	0.0	0.0	16.7
Cleveland	32.0	1.2	0.0	45.3	21.6
Detroit	0.0	0.6	0.0	0.0	99.4
Minneapolis/St. Paul	*	*	*	*	*
St. Louis	47.4	45.8	0.0	2.6	4.2
Dallas	0.0	0.0	0.0	0.0	0.0
Houston	0.0	0.0	0.0	0.0	100.0
Los Angeles	0.0	100.0	0.0	0.0	0.0
San Francisco	64.9	35.1	0.0	0.0	0.0
Denver	7.5	27.1	0.0	0.0	65.4
Total banks	32	32	32	32	32
Average	65.4%	14.5%	2.1%	10.0%	7.9%
Median	0.0%	0.0%	0.0%	0.0%	6.3%

*No respondents; † $\frac{Q13}{Q23} \times 100$; ‡ $\frac{Q15}{Q23} \times 100$; § $\frac{Q17}{Q23} \times 100$; ‖ $\frac{Q19}{Q23} \times 100$; # $\frac{Q21}{Q23} \times 100$.

The types of ACH debit transactions received by the responding banks are shown in Table 7. Not surprisingly, the largest types of payment that were identified by the responding institutions were insurance premiums (31.1%). Since it is not always possible for a financial institution to identify the transactions received through the ACH by type, the unclassified or "other" payments made up the largest portion of debits received at 41.5%. The median, however, indicated 51.0% of the ACH debit transaction were insurance premiums. The median rate of ACH debit transactions received by type for other payments was only 14.5%, which means that the average was affected by some extremes in the data.

Table 7

Percent of ACH Debit Transactions Received by Type of Transaction by Area

Area	Insurance Premium†	Home Mortgage‡	Telephone Bill Payment§	Corporate Payment ll	Other Payments #
Boston	71.0%	0.8%	0.2%	3.5%	24.5%
New York	65.0	8.1	1.3	24.4	1.2
Philadelphia	43.1	0.0	9.1	22.7	20.5
Pittsburgh	23.5	0.0	0.0	76.5	0.0
Washington, D.C.	42.3	2.1	0.0	19.1	36.5
Atlanta	43.0	4.9	8.3	9.1	34.7
Chicago	74.4	5.0	0.0	12.0	12.9
Cleveland	34.8	19.1	2.2	9.4	34.5
Detroit	55.7	0.1	0.0	8.7	35.5
Minneapolis/St. Paul	*	*	*	*	*
St. Louis	33.6	15.0	0.3	14.7	36.4
Dallas	85.7	0.2	2.9	2.6	8.6
Houston	49.4	0.2	0.8	12.9	36.7
Los Angeles	45.3	2.2	0.0	20.1	32.5
San Francisco	18.2	6.0	0.9	13.9	61.0
Denver	15.3	3.3	26.7	5.0	49.8
Total banks	109	108	108	108	107
Average	31.1%	8.9%	2.6%	15.6%	41.5%
Median	51.0%	0.0%	0.0%	2.1%	14.5%

*No respondents; † $\frac{Q14}{Q24} \times 100$; ‡ $\frac{Q16}{Q24} \times 100$; § $\frac{Q18}{Q24} \times 100$; ll $\frac{Q20}{Q24} \times 100$; # $\frac{Q22}{Q24} \times 100$.

Again, telephone bill payments received constituted the lowest percentage of debit transactions identified by the responding banks. The relatively young state of telephone bill-paying as an EFT service accounts for some of the reasons why telephone bill payments represented such a low level of total ACH debit transactions. However, the inability of many telephone bill-payment providers to generate ACH-formated transactions in lieu of paper may have had more of an impact.

Corporate payments, which were defined as replacements for depository transfer checks, were also at a very low level of total ACH debit transactions both sent and received. In only the Pittsburgh area, where corporate payments represented 99.3% of the debit transactions sent and 76.5% of the debit transactions received, did corporate payments constitute a major portion of the ACH debit transactions. Both the Boston and Cleveland areas reported that corporate payments represented 48.0% and 45.3%, respectively, of the total ACH debit transactions sent. The efforts of the Federal Reserve System to switch corporate payments from paper to electronics should affect this portion of the survey in future years.

Findings: ATM

Transaction Types

Table 8 shows ATM transactions classified by type and by 16 geographic areas. By far, the highest percentage of ATM transactions, for both the average and the median, were cash withdrawals from customer checking accounts. Cash withdrawals from checking represented 51.1% of all ATM transactions at reporting banks in 1979 as compared to 50.1% in 1978. All other types of ATM transactions maintained approximately the same relationships between the 1978 and 1979 surveys. Again, balance inquiries, the second highest category of total ATM transactions, represented 20.4% of all transactions in 1979. In 1978, none of the reporting banks indicated that balance inquiries were less than 10% of ATM activity. In 1979, however, three of the reporting banks indicated that balance inquiries represented less than 10% of activity and, in fact, only two of the areas indicated an increase in the percentage of balance inquiries to total ATM transactions. The remaining areas showed a decrease in balance inquiries as a percentage of ATM transactions ranging from 0.5% to 27.0%.

The 1979 EFT survey provided a finer breakdown of "other" ATM transactions than the 1978 survey. Both deposits to checking and savings accounts were separated in the 1979 survey from all other ATM transactions. However, the total relationship remained substantially the same between 1978 and 1979. In 1978, total other ATM transactions represented 15.2% of all ATM transactions; in 1979 the combination of checking deposits, savings deposits, and other ATM transactions represented 15.7% of total ATM transactions.

After checking and savings deposits were separated from other transactions, however, deposit functions had the highest percentage of total other ATM transactions. Checking deposits were the third highest (11.9%) of all ATM transactions by type. After deposit functions were segregated from other ATM transactions, only 2.8% of the remaining transactions remained unclassified by the responding banks. Other ATM transactions, however, still remain higher, on the average, than cash withdrawals from credit cards, transfers, and savings deposits. Again, this indicates that many banks are utilizing the ATM equipment in several innovative ways.

Table 8

Percent of ATM Transactions by Type and by Area

Area	Cash Withdrawals from Checking† 1978	1979	Cash Withdrawals from Savings‡ 1978	1979	Cash Withdrawals from Credit Card§ 1978	1979	Balance Inquiries‖ 1978	1979	Transfers# 1978	1979	Checking Deposits‡‡ 1978**	1979	Savings Deposits§§ 1978**	1979	Other ATM Transactions‖‖ 1978	1979
Boston	41.6%	59.8%	6.8%	8.5%	1.3%	1.4%	21.6%	7.8%	3.6%	3.0%		10.8%		1.8%	29.1%	6.7%
New York	59.1	66.2	1.9	3.2	23.7	8.5	13.5	13.0	0.4	1.6		6.2		0.4	1.5	0.8
Philadelphia	49.2	58.9	11.0	10.0	2.7	1.2	12.3	7.2	4.1	3.5		16.0		2.1	20.7	1.2
Pittsburgh	58.2	55.2	5.9	10.0	4.1	2.5	16.8	13.0	1.2	2.1		12.7		1.2	13.8	3.3
Washington, D.C.	51.5	59.3	6.0	5.5	5.2	2.3	17.8	12.2	2.9	3.5		13.9		1.4	16.6	1.9
Atlanta	52.3	52.8	4.3	4.6	1.0	3.4	26.3	23.6	2.0	2.0		10.6		0.5	14.0	2.5
Chicago	27.1	49.6	9.4	9.9	0.9	1.0	41.2	14.2	4.2	5.9		10.9		1.5	17.2	7.1
Cleveland	41.4	51.4	10.1	10.6	3.1	2.8	21.3	13.6	4.4	3.7		13.9		1.4	19.8	2.5
Detroit	45.6	55.7	13.8	10.3	1.1	9.4	22.6	9.5	6.8	3.3		9.6		1.1	10.1	1.1
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*		*		*	*	*
St. Louis	51.1	53.5	6.7	8.1	2.8	1.6	22.3	17.2	3.8	3.7		11.7		1.0	13.1	3.0
Dallas	*	50.9	*	3.2	*	4.2	*	28.2	*	2.2		10.1		0.5	*	0.7
Houston	61.6	45.4	5.0	4.3	0.4	10.9	16.7	19.1	1.6	2.0		8.1		0.4	14.7	9.9
Los Angeles	52.8	51.1	2.8	4.6	8.6	6.5	14.3	17.6	3.4	2.9		14.2		0.6	18.1	2.6
San Francisco	64.2	52.5	5.5	18.5	4.0	1.3	16.3	11.0	4.6	2.1		13.5		0.4	5.3	0.7
Denver	52.8	55.9	5.2	4.5	0.5	5.5	19.3	16.8	2.6	2.4		11.5		0.4	19.6	3.0
Total banks	56	109	56	109	56	109	56	109	56	109		109		109	56	109
Average	50.1%	51.1%	6.6%	7.7%	3.0%	2.3%	21.9%	20.4%	3.2%	2.8%		11.9%		1.0%	15.2%	2.8%
Median	51.5%	53.3%	5.6%	5.9%	1.8%	1.3%	18.4%	15.6%	2.7%	2.7%		11.9%		0.8%	14.9%	0.8%

*No respondents; † $\frac{Q25}{Q33} \times 100$; ‡ $\frac{Q26}{Q33} \times 100$; § $\frac{Q27}{Q33} \times 100$; ‖ $\frac{Q28}{Q33} \times 100$; # $\frac{Q29}{Q33} \times 100$; **No comparable data collected; ‡‡ $\frac{Q30}{Q33} \times 100$; §§ $\frac{Q31}{Q33} \times 100$; ‖‖ $\frac{Q32}{Q33} \times 100$.

Dollar Value of ATM Transactions

For the first time the 1979 EFT survey asked for information concerning the dollar value of ATM transactions (Table 9). The average dollar amount of cash withdrawals from checking and savings was approximately equal at $36 and $38, respectively. Average cash withdrawals from credit cards were somewhat higher at $47.

Table 9

Average Dollar Value of ATM Transactions by Area

Area	Cash Withdrawals from Checking†	Cash Withdrawals from Savings‡	Cash Withdrawals from Credit Card§	Checking Deposits ‖	Savings Deposits #
Boston	$34	$46	$31	$265	$988
New York	44	35	44	278	258
Philadelphia	40	57	68	237	327
Pittsburgh	38	41	43	276	237
Washington, D.C.	36	48	53	324	328
Atlanta	34	41	43	298	235
Chicago	40	60	45	332	303
Cleveland	39	39	43	297	250
Detroit	40	47	45	332	363
Minneapolis/St. Paul	*	*	*	*	*
St. Louis	37	43	53	293	423
Dallas	31	40	53	272	519
Houston	38	42	40	438	403
Los Angeles	39	46	45	348	346
San Francisco	37	34	43	346	290
Denver	35	44	62	295	308
Total banks	106	100	85	101	90
Average	$36	$38	$47	$309	$285
Median	$37	$42	$43	$313	$271

*No respondents; † Q34/Q25; ‡ Q35/Q26; § Q36/Q27; ‖ Q37/Q30; # Q38/Q31.

The dollar amount of deposits in both checking and savings was considerably higher per transaction than the dollar amount of cash withdrawals. The average dollar amount of a checking deposit through the ATM was $309, while the average dollar amount of a savings deposit was $285.

The averages of cash withdrawals and deposit activity are somewhat misleading because they do not indicate the total dollar value of activity through the ATM machines. The following tabulation summarizes the total dollar value of ATM activity:

Total Dollar Value of ATM Activity*

Transaction Type	Withdrawals	Deposits	Net
Checking	$19,677.00	$39,243.00	$ 19,566.00
Savings	$ 3,078.00	$ 2,907.00	$ (171.00)
Credit card	$ 1,100.00	$ 0.00	$ (1,100.00)
Total	$23,855.00	$42,150.00	$ 18,295.00

*Average dollar value (Table 9) multiplied by the average weekly transactions per ATM machine (Table 10).

As indicated by the preceding tabulation, the average weekly gain of deposit dollars through the ATM machine is approximately $18,300. While these figures may not, and probably will not, hold for all ATM machines, on the average, they indicate that an ATM machine will take in more deposit dollars than it pays out in withdrawals.

Weekly ATM Transactions

Average weekly transactions per ATM unit increased in 1979 to 1,074.0 transactions per machine per week from 981.2 in 1978 (Table 10). However, the median number of weekly ATM transactions decreased substantially from the 1978 rate of 1,039.0 to 792.2 transactions per machine per week. Seven areas reported an increase in total weekly ATM transactions, while an additional seven reported a decrease. The highest number of ATM transactions reported was in the Dallas area, which did not report total volumes during the 1978 survey. The highest number of transactions reported during 1978 was in the Atlanta area, which fell only slightly from 1,682.6 weekly transactions per machine in 1978 to 1,513.6. The Chicago area, which reported the lowest volume of transactions per machine in 1978, almost tripled its volume per machine to 1,876.7 weekly transactions. The lowest volume in 1979 was reported by the Detroit area which had 337.7 transactions per machine, substantially down from the 1978 total of 1,082.8 weekly transactions. Banks in the reporting areas can compare their volume experiences with the averages in this report.

The average number of balance inquiries increased only slightly from 225.7 weekly transactions per ATM unit from 217.8 transactions. However, the median number of weekly transactions for balance inquiries decreased substantially from the 1978 level of 156.6 weekly transactions to the 1979 level of 100.7. The level of balance inquiries reported in 1978 seemed to be substantially higher than the experiences of many banks. The lower level in 1979 seems to indicate that balance inquiries, which may be somewhat related to the novelty of the machines and the marketing efforts of the individual banks, will continue to be less and less significant.

Table 11 presents the data on the number of weekly transactions per ATM unit broken down by location of the unit. It must be noted that the average number of total ATM transactions is slightly different from the data presented in Table 10. Since a fewer number of banks were able to respond to the questions that related to

Table 10

Average Weekly Transactions per ATM Unit by Area

Area	Cash Withdrawals from Checking†		Cash Withdrawals from Savings‡		Cash Withdrawals from Credit Card§		Balance Inquiries‖		Transfers#		Checking Deposits††		Savings Deposits§§		Other ATM Transactions ‖‖		Total ATM Transactions##	
	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978**	1979	1978**	1979	1978	1979	1978	1979
Boston	178.4	333.2	29.0	47.1	5.5	5.8	92.6	72.6	15.6	15.6		48.0		9.2	124.8	36.1	429.0	567.6
New York	378.7	318.4	0.0	16.4	155.8	42.2	76.1	93.4	0.1	9.0		38.9		1.9	2.9	6.0	611.7	526.0
Philadelphia	491.7	381.5	110.0	75.9	26.6	8.3	122.5	82.6	41.0	24.2		112.6		16.0	207.3	9.3	999.1	710.5
Pittsburgh	732.4	564.1	74.2	97.3	52.0	26.9	212.1	187.6	14.8	22.8		137.0		12.3	173.6	56.4	1259.1	1104.3
Washington, D.C.	443.9	669.0	51.7	61.5	44.6	22.0	153.8	142.4	25.3	34.5		150.4		20.2	143.3	20.4	862.7	1120.3
Atlanta	880.0	797.0	72.3	73.8	17.6	28.9	442.9	390.0	34.2	30.2		160.7		8.4	235.5	24.6	1682.6	1513.6
Chicago	90.8	348.4	31.5	85.7	2.9	12.8	138.0	131.7	14.1	38.4		99.2		16.2	57.6	144.2	334.8	876.7
Cleveland	440.1	392.8	112.2	98.4	28.0	19.0	262.3	257.9	49.9	54.4		110.0		14.4	223.1	36.3	1115.6	984.2
Detroit	494.2	202.6	149.4	30.1	11.7	18.2	244.5	40.1	73.7	8.7		31.2		3.7	109.3	3.0	1082.8	337.7
Minneapolis/St. Paul	*	*	*	*	*	*	*	*	*	*		*		*	*	*	*	*
St. Louis	577.8	614.1	76.2	96.5	32.2	18.9	252.6	261.2	43.4	43.7		128.0		11.5	148.1	29.2	1130.3	1203.1
Dallas	*	776.0	*	62.5	*	38.1	*	530.9	*	29.2		156.1		10.4	*	12.1	*	1615.4
Houston	364.5	484.4	29.4	50.1	2.2	15.2	99.1	237.7	9.6	19.1		91.8		5.3	86.9	87.1	591.8	990.7
Los Angeles	407.5	692.1	22.0	53.8	66.2	47.5	110.2	219.3	26.3	32.9		208.1		7.5	139.4	21.7	771.6	1282.8
San Francisco	423.2	399.5	36.4	85.8	26.2	10.9	107.8	121.4	30.1	15.9		123.3		2.0	34.8	4.1	659.5	763.0
Denver	741.0	508.5	73.0	46.6	6.3	17.5	271.4	181.3	36.5	20.1		122.7		5.8	274.8	43.6	1403.0	945.2
Total banks	54	105	54	105	54	105	54	105	54	105		105		105	54	105	54	105
Average	491.1	546.6	64.2	81.0	28.6	23.4	217.8	225.7	31.5	30.1		127.0		10.2	148.6	30.0	981.2	1074.0
Median	464.1	428.3	59.8	46.0	20.5	10.0	156.6	100.7	26.9	19.1		93.5		5.6	172.1	5.2	1039.0	792.2

*No respondents; † Q25/Q42; ‡ Q26/Q42; § Q27/Q42; ‖ Q28/Q42; # Q29/Q42; **No comparable data collected; ‡‡ Q30/Q42; §§ Q31/Q42; ‖‖ Q32/Q42; ## Q33/Q42.

Table 11

Number of Weekly Transactions per ATM Unit Location by Area

Area	Main Office Units†	Branch Office Units‡	Off-Premise Units§	Total ll
Boston	705	457	0	495
New York	762	402	554	445
Philadelphia	663	602	720	609
Pittsburgh	837	1,050	1,937	991
Washington, D.C.	361	1,063	842	979
Atlanta	1,098	915	962	1,147
Chicago	517	570	364	736
Cleveland	1,014	548	790	576
Detroit	330	248	172	298
Minneapolis/St. Paul	*	*	*	*
St. Louis	982	1,216	474	1,055
Dallas	807	1,679	1,173	1,084
Houston	648	740	30	768
Los Angeles	768	1,235	610	1,245
San Francisco	493	670	601	587
Denver	999	121	1,764	876
Total banks	63	71	31	90
Average	786	813	852	813
Median	722	669	789	667

*No respondents; † Q47/Q39; ‡ Q48/Q40; § Q49/Q41; ll Q50/Q42.

Table 11 than to Table 10, the data are somewhat different, but the relationships should remain substantially the same.

Utilizing the medians, the survey indicates that, for the most part, all of the ATM units installed in the three types of locations have approximately the same volume of weekly ATM transactions. Only in the Cleveland area, did the main office units seem to have a higher volume of transactions than either branch office or off-premise units. In the Washington, D.C., St. Louis, Dallas, and Los Angeles areas, branch office units did more business than either the main office or off-premise units. In both the Pittsburgh and the Denver areas, the off-premise units provided substantially more volume per week than did either the main office or branch office ATM units. The relationships between main office, branch office, and off-premise units are directly affected by the branch banking laws in the 16 geographic areas surveyed. For example, the Los Angeles area reported a higher level of transactions in branch office units because it is a branching state. The Denver area reported a higher level of transaction volume in off-premise units because it is a multibank holding company state. Some relationships are blurred to some degree by the overlapping of the various types of banking within the areas as defined by the survey.

Location of ATM Units

Table 12 was developed from the question that requested responding banks to classify the ATM units currently installed by location. The apparent confusion noted in the 1978 survey concerning location classifications was clarified in the 1979 survey. The Dallas, Houston, and Chicago areas, which in the 1978 survey seemed to have some difficulty in classifying units between branch and off-premise locations, were in line with the expected classification of ATM units in the 1979 survey. As expected, most of the ATM units installed in nonbranching states were located in the main offices of the responding banks. In branching states, the highest percentage of ATM units were installed in branch office locations. Although the 1978 averages were somewhat distorted by classification problems, the median percent of units installed in each location remained substantially unchanged between 1978 and 1979.

Table 12

ATM Units by Area

Area	Percent of Main Office ATM Units†		Percent of Branch Office ATM Units‡		Percent of Off-Premise ATM Units §	
	1978	1979	1978	1979	1978	1979
Boston	9.5%	34.0%	90.5%	66.0%	0.0%	0.0%
New York	3.2	11.3	90.5	85.7	6.3	3.1
Philadelphia	10.2	15.8	85.2	79.5	4.5	4.7
Pittsburgh	3.7	30.9	95.1	64.2	1.2	4.8
Washington, D.C.	5.7	13.8	80.9	78.3	13.4	8.0
Atlanta	8.4	14.0	74.3	64.6	17.3	21.3
Chicago	22.3	47.9	11.4	37.1	66.3	15.0
Cleveland	7.1	6.4	83.8	89.3	9.1	4.3
Detroit	9.6	18.3	84.9	60.9	5.5	20.7
Minneapolis/St. Paul	*	*	*	*	*	*
St. Louis	10.1	26.8	64.3	64.8	25.6	8.3
Dallas	15.4	66.7	0.0	30.8	84.6	2.6
Houston	14.0	46.3	82.0	50.3	4.0	3.3
Los Angeles	3.7	7.1	80.0	88.5	16.2	4.4
San Francisco	3.8	3.9	86.7	88.4	9.5	7.7
Denver	48.9	48.3	0.0	39.4	51.1	12.3
Total banks	89	107	89	107	89	107
Average	10.6%	13.3%	69.3%	77.7%	20.1%	9.1%
Median	7.1%	7.7%	81.1%	84.2%	0.0%	0.0%

*No respondents; † $\frac{Q39}{Q42} \times 100$; ‡ $\frac{Q40}{Q42} \times 100$; § $\frac{Q41}{Q42} \times 100$.

Some interesting correlations can be drawn between Table 11 and Table 12. The three areas with the highest number of weekly transactions per ATM unit in off-premise units (Table 11) — Pittsburgh, Dallas, and Denver — did not have the largest percentage of off-premise ATM units. In fact, Atlanta and Detroit, with more than 20% of the ATM units installed classified as off-premise, had different experiences in the number of transactions per machine. The Atlanta area had approximately 1,000 weekly transactions per machine in all ATM unit locations, while Detroit, with the lowest number of transactions reported, had the second lowest number of weekly transactions per off-premise unit and was considerably lower than the average reported by all banks.

Some of the same correlations that appeared in 1978 between weekly transaction volumes in ATM unit locations and branching states appear to hold as well in 1979. Atlanta reported one of the highest volumes of weekly transactions per ATM unit for all responding banks. The Atlanta area, which allows limited branching, also had the highest percentage of off-premise ATM locations, indicating some success in minimizing dependence on brick and mortar branch locations. The Los Angeles and San Francisco areas had a very high percentage of branch office ATM locations. However, the Los Angeles area reported more ATM transactions per ATM unit than the average of all responding banks, and the San Francisco area reported substantially less volume per ATM unit. In the Los Angeles area, most of the weekly transactions occurred at branch office ATM locations. The San Francisco area, however, reported approximately an even distribution of volume per machine across all ATM unit locations, indicating that, at least in Los Angeles, it is difficult to wean customers away from the branch location.

ATM Installation Plans

Table 13 presents the data on ATM installation plans during the next 12 months for the responding banks. As can be seen by comparing the percent of units to be installed (Table 13) with the percent of units currently installed (Table 12), the responding banks apparently intend to maintain the same relationships between main office, branch office, and off-premise locations that are currently in effect. Slightly more than 70% of the planned installations will be in branch office locations, as compared to approximately 80% of current units installed in branches. Approximately 10% of the units are currently installed in off-premise locations. Planned ATM units in these locations will not change this ratio.

The median rate of installations, however, reveals a slightly different picture than the averages. While the approximately 80% relationship of branch office units to total ATM installations will remain almost the same between current and planned installations, many of the responding banks do not plan to install units in either the main office or off-premise locations. A few areas, such as Washington, D.C. and Cleveland, apparently intend to substantially alter the percentage of branch office ATM installations. The Denver area, however, which has had the most success with off-premise ATM unit locations, apparently intends to further increase the percentage of off-premise ATM units. Both the Atlanta and Detroit areas, which

reported the highest percent of current off-premise ATM unit locations in the 1979 survey, apparently intend to install considerably more off-premise ATM units than the average reported by the responding banks.

The last column in Table 13 indicates the planned percentage increase in new ATM installations. While the average reporting bank indicated that its installation plans call for 75% more machines during the next 12 months than are currently installed, eight locations reported plans to at least double current ATM installations. New York and Philadelphia apparently intend to have almost an 800% increase in the number of ATM installations. The Chicago area, which was recently given limited ATM installation authority, aiso intends to double the number of current machines.

Table 13

ATM Unit Installation Plans by Area

Area	Percent of Total ATM Units to Be Installed in Main Office†	Percent of Total ATM Units to Be Installed in Branch Office‡	Percent of Total ATM Units to Be Installed Off-Premise§	Total New ATM Installations to Current Installations ll
Boston	16.7%	81.3%	2.1%	387.0%
New York	0.8	74.2	25.0	812.9
Philadelphia	9.5	75.8	14.6	760.4
Pittsburgh	3.3	80.0	16.7	143.4
Washington, D.C.	0.0	98.2	1.8	14.6
Atlanta	6.3	52.7	41.0	73.9
Chicago	19.9	41.1	39.1	93.6
Cleveland	0.0	92.1	7.9	27.2
Detroit	0.0	46.9	53.1	68.4
Minneapolis/St. Paul	*	*	*	*
St. Louis	16.7	63.9	19.4	61.5
Dallas	20.0	70.0	10.0	174.4
Houston	28.1	56.3	15.6	136.2
Los Angeles	35.7	60.3	4.1	128.3
San Francisco	0.1	89.1	10.7	202.8
Denver	8.3	25.0	66.7	55.6
Total banks	80	80	80	95
Average	17.8%	71.7%	10.5%	74.8%
Median	0.0%	80.6%	0.0%	30.0%

*No respondents; † $\frac{Q43}{Q46} \times 100$; ‡ $\frac{Q44}{Q46} \times 100$; § $\frac{Q45}{Q46} \times 100$; ll $\frac{Q46}{Q42} \times 100$.

On-line Versus Off-Line

The ratio of on-line to off-line ATM units is shown in Table 14. On the average, 68.4% of the reporting banks indicated that their units were on-line. The remaining 31.6% of the reporting banks indicated that the current ATM installations were in an off-line mode. In four areas — Pittsburgh, Dallas, Los Angeles, and Denver — all the reporting banks indicated that their ATM installations were on-line. In only three locations — Boston, New York, and Philadelphia — did more than 50% of the responding banks indicate they had off-line ATM units.

Table 14

On-Line Versus Off-Line ATM Units by Area

Area	Percent On-Line ATM Units	Percent Off-Line ATM Units
Boston	20.0%	80.0%
New York	33.3	66.7
Philadelphia	40.0	60.0
Pittsburgh	100.0	0.0
Washington, D.C.	50.0	50.0
Atlanta	83.3	16.6
Chicago	50.0	50.0
Cleveland	85.7	14.3
Detroit	66.7	33.3
Minneapolis/St. Paul	*	*
St. Louis	50.0	50.0
Dallas	100.0	0.0
Houston	80.0	20.0
Los Angeles	100.0	0.0
San Francisco	80.0	20.0
Denver	100.0	0.0
Total banks	57	57
Average	68.4%	31.6%

*No respondents.

Appendices

Appendix A

1979 Survey Questionnaire

1979
Check Collection Performance Measurement Survey

Bank Administration Institute

INSTRUCTIONS

1. Complete page 3 and the data collection questions for each day of the week, Monday through Saturday. Be sure to include the date in the space provided at the top of each column in Section I.

2. Complete page 14 and 15 at end of week.

3. Mail completed survey booklet to:

David M. Smith, *Principal Systems Specialist*
BANK ADMINISTRATION INSTITUTE
P. O. Box 500, Park Ridge, Illinois 60068
Telephone: 312/693-7300

4. Please read definitions before completing questionnaire.

BANK ADMINISTRATION INSTITUTE

Check Collection Performance Measurement

Date _____

Bank Name _____

Street Address _____

City _____

Name _____ Title _____
(of person to be contacted about survey data)

Phone _____

Number of DDA accounts in your bank _____

Number of DDA accounts in other banks for which you are doing the processing _____

Please describe any significant check processing problems you are experiencing. Consider the areas of transportation, personnel, equipment, interbank exchange procedures, accuracy, theft, fraud or security.

_____

_____

_____

_____

_____

_____

INCOMING WORK includes the check processing items received from the Federal Reserve, non-local banks, local banks and items included in all deposits made in your bank. Do *not* include the DDA items you process for other banks when you provide the accounting service on a fee basis. Do *not* include extra services performed over and above the check processing for lock box deposits, credit cards, preauthorized payments, account reconcilement or wire transfer.

I. INCOMING WORK

QUESTION	Question Relationship	Monday Date_____	Tuesday Date_____
1. Number of amount encoded items received from other banks and customers who do their own encoding sent to the reader/sorter.	____		
2. Number of amount encoded items received from other banks and customers who do their own encoding *not* sent to the reader/sorter.	____		
3. Number of items your bank encoded on single pocket machines sent to the reader/sorter.	____		
4. Number of items your bank encoded on single pocket machines *not* sent to the reader/sorter.	____		
5. Number of items your bank encoded on multi pocket machines sent to the reader/sorter.	____		
6. Number of items your bank encoded on multipocket machines *not* sent to the reader/sorter.	____		
7. Number of first pass items processed on the reader/sorter.	1+3+5=7		
8. Number of items that were *not* processed by the reader/sorter.	2+4+6=8		
9. Number of items received by your bank.	7+8=9		

DATA COLLECTION FORM

Please report all actual counts. Do *not* round off.

ITEMS consist of cashed and deposited checks, deposit tickets, control tickets, and other items which are normally processed commingled with checks on proof and/or encoding equipment. For batches use standard estimating techniques to determine item count.

Wednesday Date _____	**Thursday** Date _____	**Friday** Date _____	**Saturday** Date _____	**WEEKLY TOTAL**
				1.
				2.
				3.
				4.
				5.
				6.
				7.
				8.
				9.

Please report all actual counts; do *not* round off.

OUTGOING WORK is the disposition of all items you received and processed today.

TRANSIT ITEMS are the items you processed both high speed and low speed, that were "on-others."

II. OUTGOING WORK

QUESTION	Question Relationship	Monday	Tuesday
10. Total number of transit items (on others) sent.	———		
11. Total number of transit holdover (on others) items.	———		
12. Total number of on-us items paid and filed (from previous day's incoming work).	———		
13. Total number of on-us items heldover.	———		
14. Total number of payable thru drafts processed.	———		
15. Total number of items processed today.	10+11+12+ 13+14=15		
16. Total dollar value of items in No. 11.	———	$	$

III. REJECTS—(Number of rejects that occurred from question 7, Section I)

QUESTION	Question Relationship	Monday	Tuesday
17. Total number because of transit number field.	———		
18. Total number because of account number field.	———		
19. Total number because of dollar amount field.	———		
20. Total number due to other reasons.	———		
21. Total number of first pass MICR rejects.	17+18+19+ 20=21		

TRANSIT HOLDOVERS—Items received by your bank prior to a deadline but were not processed by high or low speed systems in time to be sent for collection at that deadline. These would result in a loss of float to the bank but not to its customer. Do not add today's holdover items to the next day's count.

ON-US ITEMS—those items drawn on your bank; includes all types of checking accounts, cashier checks, deposit tickets and control tickets.

ON-US ITEMS HELDOVER—items received by your bank that were not processed in time to be posted to your accounts on the day they were received.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				10.
				11.
				12.
				13.
				14.
				15.
	$	$	$	$ 16.

REJECTS—are items rejected for any reason on the first pass through a MICR reader/sorter.

NOTE: Due to rounding, estimating, etc., the weekly totals for questions 9 and 15 may not balance, but they should approximate each other.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				17.
				18.
				19.
				20.
				21.

ITEMS MICROFILMED—total count of all check processing items filmed today.

IV. ITEMS MICROFILMED

QUESTION	Question Relationship	Monday	Tuesday
22. Total number of items filmed prior to reader/sorter processing.	____		
23. Total number of items filmed after reader/sorter processing.	____		
24. Total number of items filmed during reader/sorter processing.	____		
25. Total number of items microfilmed today.	22+23+24=25		

TRANSIT RETURN—items returned to your bank that you had originally sent out as "on others" items.

V. TRANSIT RETURNS

QUESTION	Question Relationship	Monday	Tuesday
26. Total number of return items today.	____		
27. Total dollar value of items in Question No. 26.	____	$	$

EXCEPTION ITEMS—are items or notification of items (such as debits, credits or inquiries) that may require reconcilement with other banks.

MISSENDS—items you missent or received from other banks that did not belong to you.

MISCODES (Encoding Errors)—dollar amount miscoded items you sent or received from other banks.

LISTING ERRORS (Incorrectly Charged)—items listed for an amount different from the written amount that you sent or received from other banks.

FREE—items received but not listed on incoming cash letters. (Enclosed not listed.)

LOST—items listed on the incoming cash letter but not received. (Listed not enclosed)

VI. EXCEPTION ITEMS

QUESTION	Monday		Tuesday		Wednesday	
	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
28./29. Missends						
30./31. Miscodes (Encoding Errors)						
32./33. Listing Error (Incorrectly Charged)						
34./35. Free						
36./37. Lost						
38./39. Total exception items today 28+30+32+34+36=38 29+31+33+35+37=39	**38.**	**39.**	**38.**	**39.**	**38.**	**39.**
40. Total dollar value of items in No. 38.	$		$		$	
41. Total dollar value of items in No. 39.	$		$		$	

Please report all actual counts. Do *not* round off.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				22.
				23.
				24.
				25.

Wednesday	Thursday	Friday	Saturday	WEEKLY TOTAL
				26.
$	$	$	$	$ 27.

Please report all actual counts. Do *not* round off.

Thursday		Friday		Saturday		WEEKLY TOTAL	
Discovered	Resolved	Discovered	Resolved	Discovered	Resolved	Discovered	Resolved
						28.	29.
						30.	31.
						32.	33.
						34.	35.
						36.	37.
38.	39.	38.	39.	38.	39.	38.	39.
$		$		$		$ 40.	
$		$		$		$ 41.	

LABOR MAN-HOURS—number of clerical and supervisory man-hours worked to complete each labor category listed. Separate estimated production from supervisory man-hours when appropriate for working supervisor. Include general force man-hours used in appropriate labor categories listed.

MAN-HOURS—productive time spent by department employees in completing the following tasks:

EXCEPTION ITEM MAN-HOURS—number of man-hours spent in discovering/resolving exception items for the calendar day.

ENCODING OPERATOR MAN-HOURS—number of man-hours spent encoding the items received by your bank that were not encoded.

READER/SORTER OPERATOR MAN-HOUR—number of man-hours spent processing first pass items on the reader/sorter.

MICROFILM OPERATOR MAN-HOURS—number of man-hours spent microfilming the check processing items.

VII. LABOR MAN-HOURS

QUESTION	Monday		Tuesday		Wednesday	
	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
42./43. Total number of non-officer man-hours to process the exception items in Nos. 38 and 39.						
44./45. Total data control man-hours to process the items in No. 9.						
46./47. Total single pocket encoding operator man-hours to process the items in Nos. 3 and 4.						
48./49. Total multi-pocket encoding operator man-hours to process the items in Nos. 5 and 6.						
50./51. Total reader/sorter man-hours to process the items in No. 7.						
52./53. Total operator man-hours for cash letter makeup. Questions Nos. 10 and 11.						
54./55. Total microfilm operator man-hours to process the items in Nos. 22 and 23.						
56./57. Total paying and filing man-hours to process the items in Nos. 12, 13, and 14.						
58./59. Total man-hours to process return items in No. 26.						
60. All other non-officer man-hours used in check processing not reported in 42 to 59.	Hours / Description ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ **60.** Total ____		Hours / Description ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ **60.** Total ____		Hours / Description ____ ____ ____ ____ ____ ____ ____ ____ ____ ____ **60.** Total ____	

DATA CONTROL MAN-HOURS—consists of making MICR corrections or substitutions, preparing other entries for high-speed processing, controlling the movement of batches of items into and out of high-speed processing areas, and balancing the transit and DDA entry runs, and the preparing of daily settlement figures for departments involved in processing checks.

RETURN ITEM MAN-HOURS—number of man-hours spent in processing items returned to your bank that you had originally sent out as on-others items.

PAYING AND FILING MAN-HOURS—consists of processing "on-us" items including the capture of MICR data, preparation of daily transaction files, updating of customer master files, sorting of paper documents, statement printing, management reports, verification of signature, date holds, stop payment, etc., check filing and statement rendering.

CASH LETTER MAKEUP MAN-HOURS—consists of processing outgoing ("on-others") items on computer and/or reader/sorter equipment, including the printing of cash letters, the fine sorting of items by destination, and the assembly and dispatch of these items including any manual processing of quick kills and reader/sorter rejects.

Thursday		Friday		Saturday		WEEKLY TOTAL	
Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory	Clerical	Supervisory
						42.	43.
						44.	45.
						46.	47.
						48.	49.
						50.	51.
						52.	53.
						54.	55.
						56.	57.
						58.	59.
Hours Description 60. Total		Hours Description 60. Total		Hours Description 60. Total		60. Total	
		61. Total of questions 42 to 60				61.	

PLEASE COMPLETE THE FOLLOWING AT THE END OF THE WEEK:

Total of Debit and Credit Outstanding Transit Exception Items	Part of Total Exception Items (Debit and Credit) That Have Been Outstanding for				
	1 Month or Less	1-2 Months	2-4 Months	4-6 Months	Over 6 Months
62. $____ Amount	**63.** $____ Amount	**64.** $____ Amount	**65.** $____ Amount	**66.** $____ Amount	**67.** $____ Amount
68. ____ Items	**69.** ____ Items	**70.** ____ Items	**71.** ____ Items	**72.** ____ Items	**73.** ____ Items

NOTE: 62=63+64+65+66+67
68=69+70+71+72+73

Generally, our bank would: (check one)

- ☐ Always balance before items leave the bank, even if it means missing a transit deadline.
- ☐ Attempt to balance before the items leave the bank, but will make a transit deadline even if balancing is incomplete.
- ☐ Very seldom balance before the items leave the bank to make transit deadline.

Our bank's experience over the last year indicates that Exception Items have:

		Why
Grown	☐	_____
Remained about the same	☐	_____
Decreased	☐	_____

The staff responsible for making adjustments and reconciliations over the last year has

*Number of People**		*1978*	*1979*
Grown	☐		
Remained about the same	☐		
Decreased	☐		

**Number of full time equivalent people.*
Express part time people as fractional of full time people.

SPECIAL PROCESSING QUESTIONNAIRE

Note: The following two sections should be completed if your bank utilizes IBM 3895/6 encoding equipment and/or uses automated reject processing equipment.

AUTOMATED ENCODING

QUESTION	Question Relationship	Weekly Total
74. Total number of items encoded on IBM 3895/6	_____	**74.**
75. Total number of items encoded on other single pocket encoders	_____	**75.**
76. Total number of items encoded on other multi pocket encoders	_____	**76.**
77. Total number of items encoded	74+75+76=77	**77.**
78. Total man-hours used to process items in No. 74	_____	**78.**

AUTOMATED REJECT PROCESSING

AUTOMATED REJECT PROCESSING—Processing of all nonmachinable items, including items rejected by the MICR reader/sorter, on *both first pass and subsequent passes*, using automated equipment from vendors, e.g., BancTec, Burroughs, Cummins-Allison, Lundy, NCR.

AUTOMATED REJECT PROCESSING MAN-HOURS—consists of preparing reject items for processing, (including attaching strips) processing items, and balancing output.

Is your bank using automated processing?

☐ No ☐ Yes, exclusively ☐ Yes, in combination with manual methods

If not, does your bank plan to acquire automated reject processing capability?

☐ No ☐ Yes ☐ Undecided

If your bank uses automated reject processing, is it

☐ On-line ☐ Off-line?

If your bank uses automated reject processing, do you repair all fields, including account number?

☐ No ☐ Yes ☐ Yes, on selected banks ☐ Yes, but only if operator intervention is not required

QUESTION	Question Relationship	Weekly Total
79. Total number of all rejects processed through automated reject systems.	_____	**79.**
80. Total number of all rejects processed through manual reject systems.	_____	**80.**
81. Total number of MICR rejects processed.	79+80=81	**81.**
82. Total man-hours used to process reject items in No. 81.	_____	**82.**

Problems/comments: _____

_____

_____

_____

Please report all actual counts; do not round off.

ACH TRANSACTIONS— Any Electronic Funds Transfer transactions processed through a local or regional Automated Clearinghouse, including any items you have processed for your own customers.

RETURNED ACH TRANSACTIONS:

Sent— Any ACH transaction which you returned to the originator because you were unable to post to an account or for which no prenotification was on file.

Received— Any ACH transaction which you originated, but was returned to you by the ACH or the intended receiver.

I. ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY	
		Sent	Received	Sent	
1./2. Debits	_____				
3./4. Credits	_____				
5./6. Total ACH Transactions	1+3=5 2+4=6				

II. RETURNED ACH TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY	
		Sent	Received	Sent	
7./8. Debits Returned	_____				
9./10. Credits Returned	_____				
11./12. Total Returned ACH Transactions	7+9=11 8+10=12				

III. ACH DEBIT TRANSACTIONS

QUESTION	Question Relationship	MONDAY		TUESDAY	
		Sent	Received	Sent	
13./14. Insurance Premium	_____				
15./16. Home Mortgage	_____				
17./18. Telephone Bill Payment	_____				
19./20. Corporate Payment—Replacement for Depository Transfer	_____				
21./22. Other Payments	_____				
23./24. Total ACH Debit Transactions	13+15+17+19+21=23 14+16+18+20+22=24				

ACH DEBIT TRANSACTIONS:

Insurance Premium, Home Mortgage—Any ACH transaction sent or received by you for the payment of a consumer obligation.

Telephone Bill Payment—Any ACH transaction sent or received by you as a result of a telephone bill payment program at a financial institution.

Corporate Payment—Any ACH transaction sent or received by you that was originated by a corporation for the account of a corporation.

	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
Rec'd	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									1.	2.
									3.	4.
									5.	6.

	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
Rec'd	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									7.	8.
									9.	10.
									11.	12.

	WEDNESDAY		THURSDAY		FRIDAY		SATURDAY-SUNDAY		WEEKLY TOTAL	
Rec'd	Sent	Received	Sent	Received	Sent	Received	Sent	Received	Sent	Received
									13.	14.
									15.	16.
									17.	18.
									19.	20.
									21.	22.
									23.	24.

Please report actual counts; do not round off.

ATM TRANSACTIONS—Any transactions initiated at an Automated Teller Machine by the customer.

IV. ATM TRANSACTIONS

QUESTION	Question Relationship	MONDAY	TUESDAY
25. Total number of cash withdrawals from checking.	_____		
26. Total number of cash withdrawals from savings.	_____		
27. Total number of cash withdrawals from credit card.	_____		
28. Total number of balance inquiries.	_____		
29. Total number of transfers between checking, savings, and credit card accounts.	_____		
30. Total number of checking deposits received.	_____		
31. Total number of savings deposits received.	_____		
32. Total number of other ATM transactions.	_____		
33. Total ATM transactions.	25+26+27+28+29+30+31+32=33		
34. Total dollar value of items in No. 25.	_____	$	$
35. Total dollar value of items in No. 26.	_____	$	$
36. Total dollar value of items in No. 27.	_____	$	$
37. Total dollar value of items in No. 30.	_____	$	$
38. Total dollar value of items in No. 31.	_____	$	$

Please complete the following questions:

	Main Office
How many Automated Teller Machines do you presently have in service?	**39.**
How many Automated Teller Machines do you plan to install in the next 12 months?	**43.**
What was the total volume of ATM transactions for all machines installed at each location during the survey week, excluding balance inquiries.	**47.**

Are your Automated Teller Machines currently ☐ On-Line or ☐ Off-line? *(Please check one)*

WEDNESDAY	THURSDAY	FRIDAY	SATURDAY/SUNDAY	WEEKLY TOTAL
				25.
				26.
				27.
				28.
				29.
				30.
				31.
				32.
				33.
$	$	$	$	34. $
$	$	$	$	35. $
$	$	$	$	36. $
$	$	$	$	37. $
$	$	$	$	38. $

Branch Offices	Off-premise Units	Total ATM Units
40.	41.	42.
44.	45.	46.
48.	49.	50.

NOTE: 42=39+40+41
46=43+44+45
50=47+48+49=33-28

Appendix B

EFT Geographic Areas

Figure B-1
EFT Geographic Areas

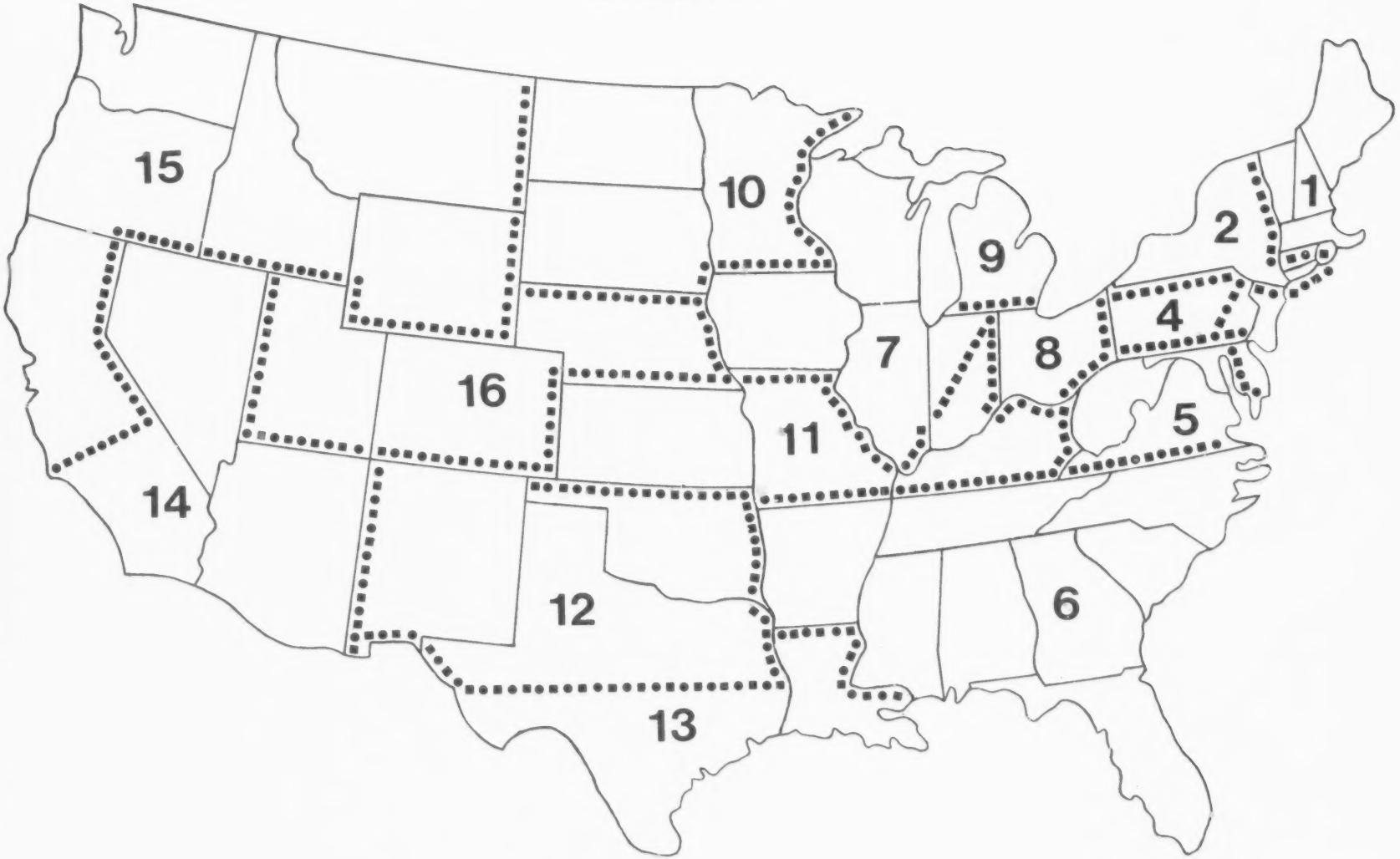

Table B-1

Survey Respondents by Geographic Area

Area*	ADL Survey Banks 1976	1977	1978	1979	All Reporting Banks† 1976	1977	1978	1979
Boston	3	3	3	1	13	14	10	9
New York	4	5	5	5	16	18	20	17
Philadelphia	1	3	3	1	14	21	18	22
Pittsburgh	3	4	3	2	6	6	6	5
Washington, D.C.	0	0	2	1	7	8	10	7
Atlanta	2	2	2	2	15	18	14	19
Chicago	4	4	6	3	9	14	12	8
Cleveland	3	2	3	3	11	10	12	11
Detroit	2	2	3	1	6	9	6	8
Minneapolis/St. Paul	3	3	0	0	3	3	0	0
St. Louis	3	3	1	2	10	10	9	9
Dallas	3	3	3	2	9	8	6	4
Houston	0	2	2	2	2	5	8	9
Los Angeles	1	2	2	1	7	9	9	9
San Francisco	3	3	2	2	9	9	8	11
Denver	2	3	3	2	4	6	6	5
Total banks	37	44	43	30	141	168	154	153

*_The Outlook for the Nation's Check Payment System: 1970-1980_, Arthur D. Little, Inc., Cambridge, Massachusetts, December, 1970.

†The non-ADL banks are not necessarily located in the cities surveyed by ADL. For the sake of consistency, however, their data are included in a regional area that has as its center the city studied in this survey. All reporting banks include the data from the ADL banks.